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GB A 2085962
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GB 1419382
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E2X

(54) Parcel transfer device

(57) The device comprises a container 1 which is mounted in a security barrier to form a part thereof, the container having first and second doors 23 on opposite sides of the barrier. Each door is pivotable about its bottom edge between an open position in which articles may be inserted into or removed from the container and a closed position in which access is denied to the container. Interlocking means are provided (Figure 2) whereby each door is locked in its respective closed position whilst the other is open. Pairs of arms 6 and 7, attached to respective doors 2 and 3, tilt a false floor 8 towards whichever door is open. Means can be provided to bias one door towards an open position, thereby locking the other door.

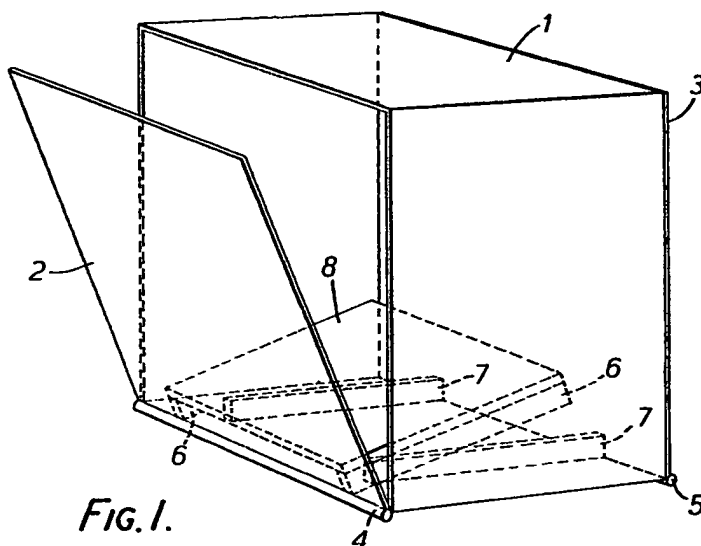
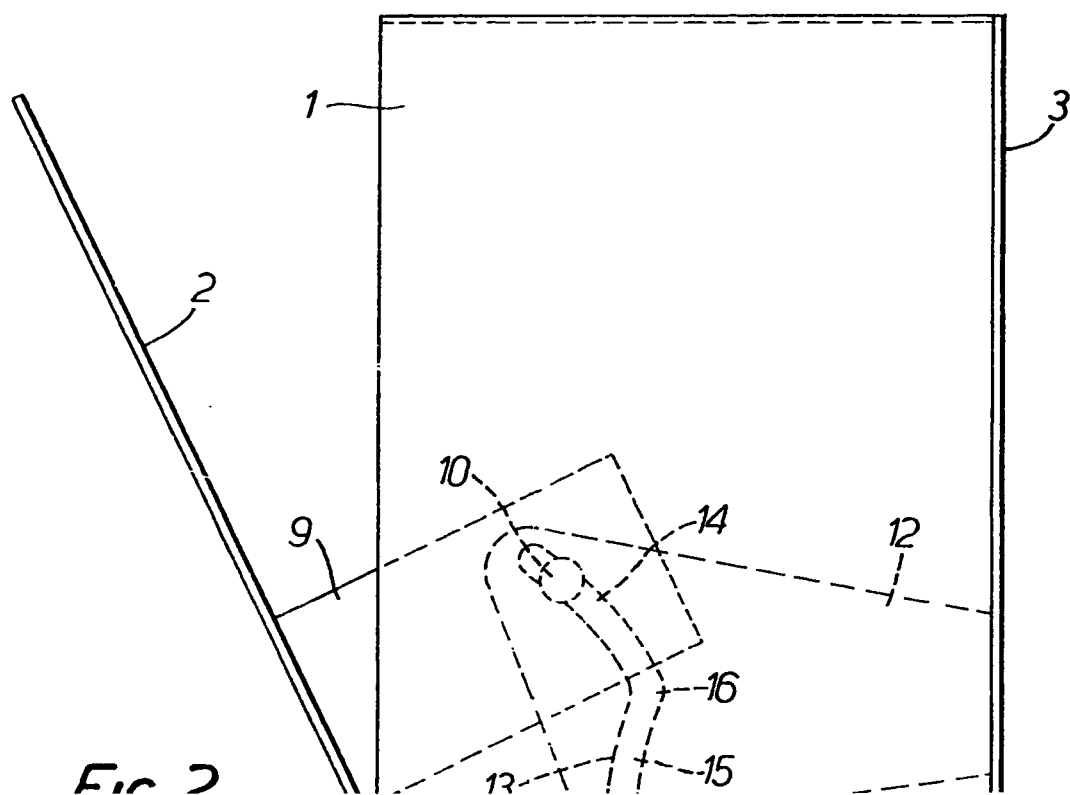
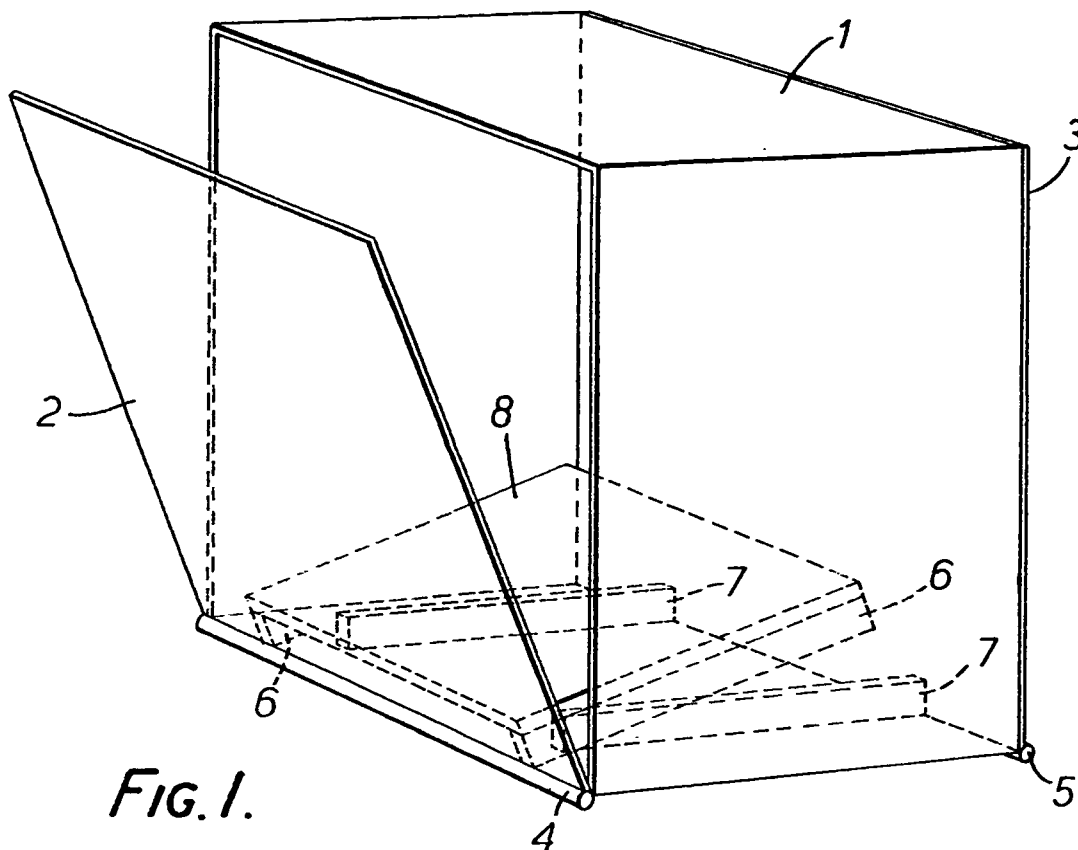


FIG. 1.

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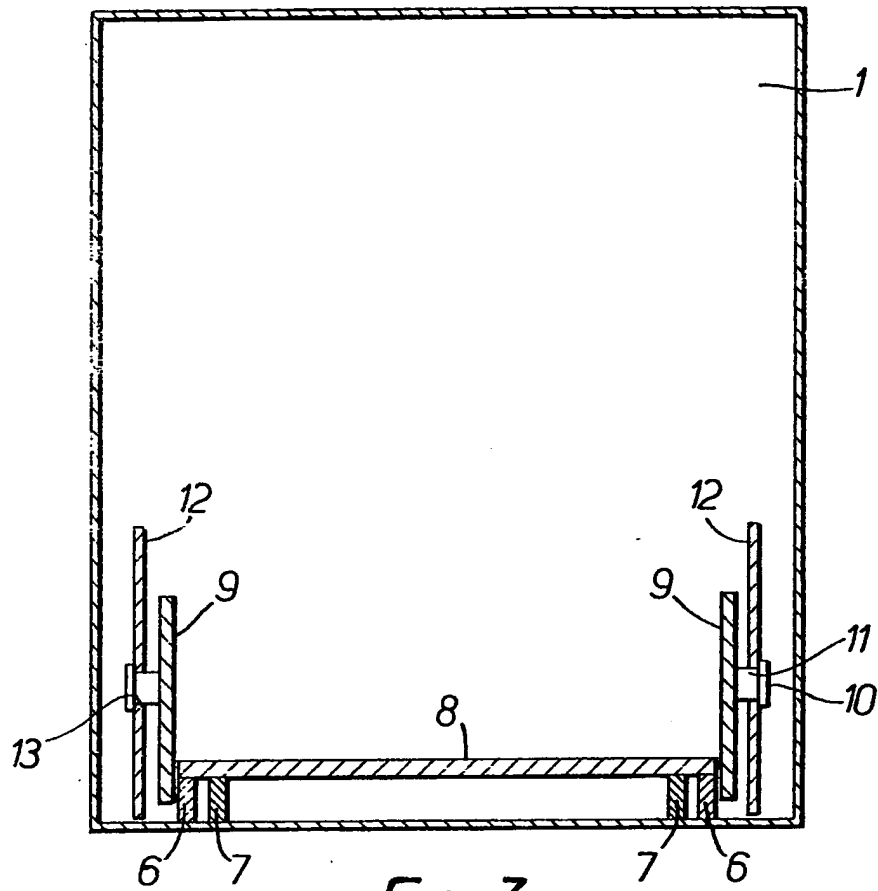
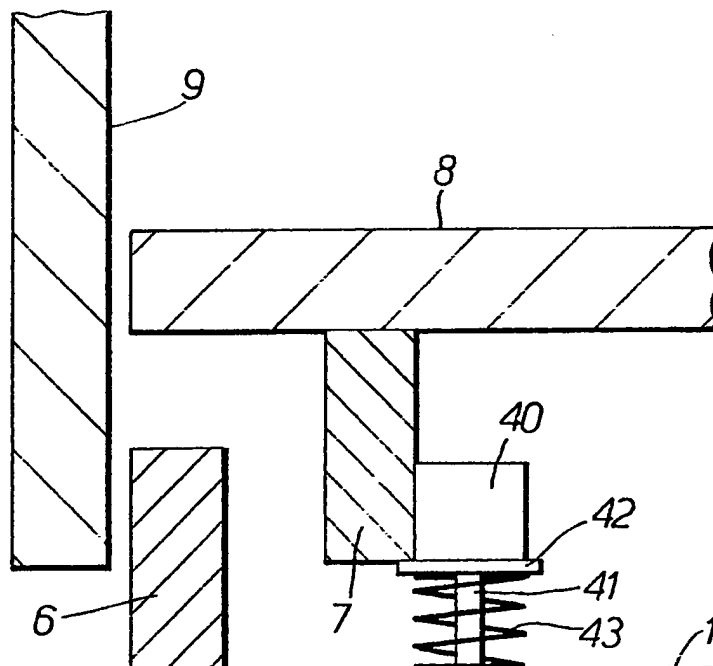


FIG. 3.



SPECIFICATION

Parcel transfer device

- 5 This invention relates to a device for the transfer of articles such as parcels and the like from one side of a barrier to the other.

Counter positions including security screens are common in Post Offices, Banks, Building Societies and many other premises where the threat of bandit attack exists. Such screens aim to discourage unauthorised access to the protected side of the counter where the clerk or cashier is situated. However, the barrier presented by the security screen makes difficult the passage of articles from one side of the counter to the other, especially so in the case of relatively large articles such as parcels.

Some known security barriers have a hatch, window or doorway which can be unlocked to allow large articles to be passed therethrough. Such an opening presents a high security risk as an opening large enough to receive a large article such as a parcel can be used by a bandit to gain unauthorised access.

There is therefore a requirement for a transfer device, capable of receiving large articles such as parcels, yet preventing unauthorised traversal of the barrier.

Accordingly there is provided a device for the transfer of articles from one side of a barrier to the other comprising a container adapted to be inserted into the barrier to form a part thereof, the container having first and second doors on opposite sides of the barrier, the doors being pivotable about their bottom edge between an open position wherein articles may be inserted into or removed from the container and a closed position wherein access is denied thereto, and interlocking means whereby each door is locked in its respective closed position whilst the other is open.

The interlocking means is provided to ensure that the first and second doors can never both be open at the same time. Thus a direct pathway through the barrier is never provided, making unauthorised entry to the protected side of the counter more difficult.

Conveniently each door is provided with a base portion comprising one or more cantilevered arms connected to the door so as to pivot therewith, and there is further provided a false floor adapted to be supported by either base portion and to pivot therewith. The false floor is therefore free to pivot with whichever of the two doors is being opened so as to remain at right angles thereto. This arrangement provides a more stable base for the receipt of articles into the container, and also helps to ensure that articles remain in abutment with a particular door as it is being opened or closed.

Each base portion conveniently comprises two cantilevered arms spaced one from another, preferably such that the two arms are equidistant from

doors away from its closed position. This will ensure that the other door is locked in its closed position by the interlocking means until such time as the said one door is pushed shut against the action of the resilient biasing means. Where each door is provided with a base portion as previously described, the resilient biasing means is conveniently located between the base of the container and the base portion of the said one door. The resilient biasing means conveniently comprises a coil spring.

The interlocking means preferably comprises first and second members connected to the first and second doors respectively so as to pivot therewith, the first member being provided with a shaped channel and the second member having a projection adapted to be constrained therein. Preferably the shaped channel is in the form of a dogleg constituted by two arcuate sections with an elbow portion therebetween. When both the first and second doors are in their respective closed positions, the projection is adjacent the elbow portion and can therefore be moved into either of the two arcuate sections as either of the doors is opened. Once either door is opened, the projection is constrained within one or other of the arcuate sections preventing opening of the other door.

Conveniently the shaped channel is in the form of a slot in the first member in which slot the projection is constrained to run. The projection may simply comprise a pin, or alternatively include a roller bearing adapted to engage the shaped channel.

One embodiment of the invention will now be described in further detail, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a schematic view of a transfer device according to the invention showing hidden detail of the base thereof.

Figure 2 is a schematic view of the transfer device of *Figure 1* showing hidden detail of the interlocking means thereof,

Figure 3 is a cross sectional view of a transfer device according to the invention, and

Figure 4 is a cross sectional view of a part of an alternative embodiment of transfer device according to the invention.

Referring specifically to *Figure 1*, the transfer device comprises an open ended, rectangular container 1, the opposite open faces of which are provided with doors 2 and 3 respectively. Each of doors 2 and 3 is pivotable about pins 4 and 5, attached to the container 1 at the base of each of its open faces.

Firmly secured to the door 2 towards the bottom thereof is a base portion constituted by two cantilevered arms 6 extending perpendicularly away from the door 2. The door 3 is provided with a similar base portion constituted by the arms 7 secured thereto. The arms 7 are spaced inwardly from the positioning of the opposite arms 6 so as

door 2 or door 3 may be pivoted about its respective pin to provide access to the container 1. As door 2 is opened, the arms 6 attached thereto cause the tray 8 to tilt towards door 2 so as to remain at 90°C thereto. Similarly if door 3 is opened, the arms 7 engage the tray to tilt it in the opposite direction so as to remain at 90°C to the door 3. In this manner the tray 8 provides a base which is always at 90°C to whichever of the two doors 2 or 3 is being opened.

Figures 2 and 3 show the interlocking means which prevents both door 2 and door 3 from being opened at the same time. Two plates 9 are attached to the door 2, each plate being secured to the door along one of its edges. The plates 9 are vertically positioned towards each side of the door 2 such that they lie outside the tray 8 and the two sets of arms 6 and 7 (see Figure 3). Each plate 9 is provided with a projection in the form of a pin 10 on which is mounted a roller bearing 11.

A secondary set of plates 12 is attached to the door 3, the plates 12 being positioned such as to lie adjacent the plates 9. The secondary plates 12 are each provided with a shaped slot 13 through which the pin 10 and bearing 11 extend. The shaped slot 13 is in the form of a dogleg, having a first arcuate section 14 and a second arcuate section 15. The two arcuate sections 14 and 15 are separated by an elbow portion 16.

When both door 2 and door 3 are closed, pin 10 and its associated roller bearing 11 are adjacent the elbow portion 16. In this position the interlocking means allows either one of the two doors to be opened. If door 2 is opened, the plates 9 are pivoted with the door and the pin 10 moves along the arcuate section 14. The door 3 is therefore locked in its closed position. This is the position shown in Figure 2.

As soon as either door 2 or door 3 is moved away from its respective closed position, the interaction between the two sets of plates 9 and 12 serves to lock the opposite door closed. Thus there is never a direct pathway through the container 1.

Figure 4 shows a part of an alternative embodiment in which one of the two doors is biased away from its closed position. Plate 9, tray 8, and arm 6 are as previously described, but arm 7 is provided with a U-shaped bracket 40. The bracket 40 extends transversely of the arm 7 and is axially mounted on a stem 41 secured to the bottom of the container 1. Also mounted around the stem 41 is a washer 42 and the bottom of the container so as to urge the bracket 40 upwardly in the sense of Figure 4.

The action of the spring 43 is to move the arm 7 upward and hence door 3 is maintained in a position slightly away from its closed position, typically by about 5°C. The interlocking means described with reference to Figures 2 and 3 therefore registers the door 3 as open and locks door 2 closed, the pin 10 being away from the elbow portion 16 and into arcuate section 15. The door 2 is therefore kept locked shut until such time as it is released by

It is envisaged that the transfer device be mounted as a part of a barrier such that the door 2 is on the side of the barrier open to the public. The arrangement described with reference to Figure 4 discourages unauthorised tampering with the transfer device as the door 2 can only be opened in the presence of a member of staff following the closure of the door 3 on the opposite side of the barrier. The internal mechanism of the device is not ordinarily susceptible to tampering as the door 2 is locked shut when the device is unattended.

CLAIMS

1. A device for the transfer of articles from one side of a barrier to the other comprising a container adapted to be inserted into the barrier to form a part thereof, the container having first and second doors on opposite sides of the barrier, the doors being pivotable about their bottom edge between an open position wherein articles may be inserted into or removed from the container and a closed position wherein access is denied thereto, and interlocking means whereby each door is locked in its respective closed position whilst the other is open.

2. A device according to claim 1, wherein there is provided resilient biasing means adapted to urge one of the doors away from its closed position.

3. A device according to claim 1 or claim 2, wherein each door is provided with a base portion comprising one or more cantilevered arms connected to the door so as to pivot therewith, and there is further provided a false floor adapted to be supported by either base portion and to pivot therewith.

4. A device according to claims 2 and 3, wherein the resilient biasing means is located between the base of the container and the base portion of the said one door.

5. A device according to claim 2 or claim 3 or 4 as appended to claim 2, wherein the resilient biasing means comprises a coil spring.

6. A device according to claim 3 or claim 4 or 5 as appended to claim 3, wherein each base portion comprises two cantilevered arms spaced from one another.

7. A device according to claim 6, wherein the two cantilevered arms are equidistant from the mid point of the container.

8. A device according to any of claims 1 to 7, wherein the interlocking means comprises first and second members connected to the first and second doors respectively so as to pivot therewith, the first member being provided with a shaped channel and the second member having a projection adapted to be constrained therein.

9. A device according to claim 8, wherein the shaped channel is in the form of a dogleg constituted by two arcuate sections with an elbow portion therebetween.

10. A device according to claim 8 or claim 9, wherein shaped channel is in the form of a slot in

wherein the projection includes a roller bearing adapted to engage the shaped channel.

12. A device substantially as hereinbefore described with reference to Figures 1 to 3 or to Figures 1 to 3 as modified by Figure 4 of the accompanying drawings.

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